

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In re application of:

Inventors: O. Clarisse et al.

Case: 3-1-32-2

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Examiner: R. Suazo

Title: Virtual Direct Connect Network

COMMISIONER FOR PATENTS
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ALEXANDRIA, VA 22313-1450

SIR:

DECLARATION OF PRIOR INVENTION IN THE UNITED STATES
TO OVERCOME CITED PATENT OR PUBLICATION (37 C.F.R. §1.131)

This declaration is to establish completion of the invention in this application in the United States, at a date prior to December 13, 2001, that is the effective date of the prior art publication that was cited by the Examiner.

1. I believe that in January-March 2000 the invention as described in the application was made and formulated. The inventors shared many years of experience with classical telephony switching system (5ESS) – James Dunn, Voice over IP (VoIP) in 7R/E, H.323 access gateways – Pascal Collet, Elemedia compression, Inferno (Lucent Inferno Operating System) Namespace-based IP telephony systems and application distribution – Olivier Clarisse and Bruce Westergren, Patent 6,591,290, and Internet and Web services and servers – Pascal Collet, and Olivier Clarisse & Bruce Westergren (MIT CL-HTTP project 1995-96). In January and February 2000 we met weekly to discuss and review progress on several inventions. The present invention was formulated and completed on a drawing board, summary notes (possibly discarded by retention policy) would have been submitted to the Lucent Law Office (to determine potential patentability) in Jan.-March 2000 time frame. Discussions with the Law Office did resume in Summer 2000 (with James Dunn). Recovered records are provided [A1-2][B1-2].

2. From January to April 2000, a group conferencing system, based on a Lucent Softswitch (LSS – research version), a proxy server (including Servlet software) and IP End Points was reduced to practice[A1-2][B1-2][1]. A first phase prototype (1PP) system was demonstrated at an invited business conference (including invited Lucent partners, customers, several hundred participants), Lucent Full Circle conference at the San Francisco Hilton Towers on May 17th 2000. The details of the invention were not shared, only the end user experience was shown. The emphasis of this conference was on the LSS capabilities and Open API. The 1PP system included, an LSS, a Proxy Web server, an IP Gateway and provided the ability **to complete predefined conference calls at a click of a button** using VoIP and LSS signaling [A1-2][1].
3. The 1PP system comprised 6 touch screen IP Web telephone prototypes by Lucent [2], and enabled combined and simultaneous access to email; implemented full Internet web browsing. The 1PP system implemented click-to-conference call services on an IP network. Each user End-Point had access to a screen display with lists of available users and corresponding button click (touch screen) selections to setup conference calls. The display interface was provided by Servlets[1] executing application software on the Web Server. In addition **multi-way conference numbers** (e.g. Using a Media server, LSS or MMRS) could be **arranged and recorded as buttons on the phone display** using Applets residing on the end device. Selection of a conference button would rejoin the original conference participants [1].
4. A second follow-up prototype implementation (2PP) was completed by the inventors using the H.323 protocol and IP telephones in the Summer of 2000, this system, internally known as WebDial, was demonstrated [1]. In parallel, work with SIP stacks and IP Web telephone was started (3PP) [3][4]. In fall 2000, new SIP stack software versions were written as part of the 3PP project (Sept.-Oct.) to replace the Mantra protocol originally used on the IP Web telephones [4][5]. The SIP stack was extended to verify the practicality of reducing the rest of the 'Mesh Patent' to practice[5].

5. The final part of the invention was realized using the SIP protocol and a SIP proxy enabling the setup of multiple calls between IP Web telephones [6][7][8]. Simultaneous setup, reuse and switching between many call instances and between several (3) IP telephones was tested to verify the Mesh setup. It was verified that the connections were reused and practically provided packet exchanges immediately upon reuse of connection requiring no additional control signaling. Several simultaneous connections between 3 IP Web telephones were created in the FLW Lab in early November 2000 and demonstrated to other inventors (Pascal Collet and Bruce Westergren) [5]. The multiplicity of calls was setup via command line and scripts (due to incompleteness of the graphical interface implementation). Additionally in the order of 100 simultaneous (many redundant) connections were tested between 2-3 End-Points as planned [A1-2]. While this last 3PP experiment uncovered some dead-lock situations (software bugs in the realization) it nevertheless enabled us to verify, and convince ourselves, of the practicality of an implementation with larger conference setups and reuse even for highly over-subscribed mesh designs (e.g. between few available end-points).

6. In addition the following references are included to demonstrate extensions complementing the patent already described showing continued advances in the art between Nov. 2000 and Jan./Feb. 2001 [8][9] and [10]. The extensions include the ability for a client to setup third party call control (3PCC), controlling calls between two other independent parties, and the ability to maintain a multiplicity of audio channels (and reuse them) on each client [10]. These extensions were used as part of a service solution for a customer trial in Uruga, Japan. The system was shipped March 1st 2001.

On March 15, 2002 and on March 18, 2002, Bruce Westergren and I each filled out and signed an Invention Record for this invention (copy attached) [C]. These records support the above statements that a prototype was implemented and demonstrated in November 2000. Applicants have been able to retrieve several versions of the file sip.b (including sip39.b dated November 3rd 2000), and referred to in the Invention Record filled out by O. Clarisse. Copies of these records are included as attachments [C].

Attached are brief summaries of the documents referred to above, and the documents themselves.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon

Olivier Bernard Clarisse
Olivier Bernard Clarisse

2005/06/07
Date

Attached:
Identification of Documents
Documents

Identification of Documents (References):

A1) 2000/1/11-2000/5/11 Copies of 8 pages from a Lucent Lab Notebook including:

- Page 1: 1999/7/12 – First page of notebook identifying some of the direction of new work, including a C 2 Dial (Click To Dial) patent as example.
- Page 88: 1/11 – First mention of the Full Circle conference (in preparation at the time) including references to: Lucent Softswitch (LSS), Media Server, and the first 3 way call established using LSS.
- Page 97: 4/13 – Page with lab notes for BFA project configuration (Broadband Fiber Access project) including the first mention of (connection) Mesh (media builder). A term used to provide “mesh” connections for media (e.g. stream) access. Parlay interface (for control) and access diagram through BFA from (video) phones to both Internet and ATM backbone. For someone familiar in the art, the references to ATM, BFA (c.f. Lucent Patents), PVC and Mesh media builder, provides precisely a (preset) mesh through Private Virtual Circuits (PVC) applicable to multimedia connection (by ATM definition: to be reused) for fast and broadband communication access between ATM gateways and end-points. The sketch on the bottom right further clarifies the intent to combine ATM PVC links with Internet access (BFA gateway between ATM and IP). During various meetings between the inventors a mapping was established to explicitly extend the Mesh connection model used with BFA into the IP (Internet) domain, and combine access to other networks.
- Page 100: 4/24 – Notes reference to Daughter's day (annual event, May 27?) where a demonstration of the (VoIP) conference system was made to visiting students. The service list note includes: VoIP, Web Portal services and 1st and 3rd party call control conferencing.
- Page 101: 4/24 – Note of a meeting date being planned with Guy Zenner (CMTS expert in switch architecture, for an architecture review -- a demonstration of the Web Portal conferencing and presence system was given to Guy Zenner).
- Page 103: 5/10 (probable date based on p. 101) – Note including: Mesh demo (with) 100 calls. [“Convert our demo to this [Jain] by 2005” -- the 2005 date was intended as a joke because we never wanted to convert to Jain – ever – Instead we planned to use Parlay].
- Page 104: 5/10? – Notes on a test to establish 30 conference calls using Lucent MMRS Media Server.
- Page 105: 5/11 – The inventors team lab architecture plans comprising SPEED (and Internet and ATM cross-connect fabric and platform used to develop Wireless products, instead of BFA above) as access to ATM, Wireless, DSL and Analog networks, H.248 MGCP (session control) with Parlay interface to Gateway, Compact IN (service switch), Service Creation Environment (SCE), service control and access from network to Server via Parlay and via HTTP from Web Server (portal) to a multiplicity of end-point (EP) IP or Analog. The combination of these elements support, in the “Advantages” section of a description of the invention [B1], its applicability to a multiplicity of networks.

A2) The notebook pages are supplemented by dated copies of corresponding emails retrieved from a mail archive and reprinted recently. An email [B1] contains a document document in attachment describing the Mesh invention on May 9 2000. Other email messages are included to provide background information (matching [A1]), including a reference to “the Mesh 100 call reuse test plan” and an included document (2000/05/10) describing the BNSP system, later published in the Bell-Labs Technical Journal .

B1) 2000/5/9 A retrieved copy of the invention description as it was circulated and was reviewed by the inventors on that day. The description is very similar to the final reprint [B2].

B2) 2000/9/6 Recent reprint of an archived directory index (dated) and copy of the included archived document MeshPat.doc (Sept. 6, 2000). The Mesh document (Virtual Direct Connect Network) includes a simple Mesh picture and a summary of the present invention. In less than three pages, the document clearly describes the intention of this invention to **support a variety of pre-connected communication channels between parties**. The MeshPat document was used and reviewed by the inventors in the process of further communicating the invention while working with a first Patent Attorney (a demonstration was given in our Lab then). This is believed to be the final version of this document emailed to all the inventors, previous versions (not on record except [B1]) would have been previously reviewed and edited. [The internal review process may take 6 to 9 months from the initial submission of invention for consideration of patent-ability, to the first meeting with an attorney for describing, documenting, and/or demonstrating the principles of the invention.]

C) 2002/3/15-18 Copies of Invention Records from Bruce Westergren and Olivier Clarisse.

- 1) 2000/6/6 Copy of an original project presentation including:
Page 2: Lucent Softswitch and VoIP calls.
Page 5,6,7: high level system list including Gateways, Servers, Interfaces, and supported services including: Conference Management (Page 5), conferencing based on Lucent Media server (Page 6).
Page 4 and 8: the layered software architecture
Page 9: the network architecture over IP,
Page 10: the service architecture of the conference system with Softswitch, Resource Server, and **Web conferencing server with database storage for conference data and Servlets** as also described in the MeshPat document [B].
- 2) 2000/6/16 Document of Lucent Web phone prototype modification, describing the basic functionality provided in support of the reduction to practice aforementioned. At the time there were no other known VoIP capable phones combining touch screen capability as well as accessibility to the Internet via Web Portal (servers) and email. This type of phone enables click/touch to conference call as described in the invention.
- 3) Index of two archived directories with original software aforementioned sip.b (multiple versions retrieved and referenced below) and logs of several experiments retrieved.
- 4) 2000/7/31 Printout of sip.b~12 a mini sip stack version supporting basic SIP messaging for call control (call control and tear-down) as well as audio connection.
- 5) 2000/11/03 Printout sip39.b a version of sip stack supporting in addition to (4) a multiplicity of call instances, methods to create, register, store and retrieve calls from list of calls. Methods to switch to a different call and to access the next call. Methods to register, find, add, remove and replace multiplicity of clients. A connect method to reuse existing connection (ports) or create new one as needed. Methods for sending signaling messages per call, resending and reconnecting as needed to insure delivery. Methods to add sessions to calls. Methods to establish audio paths per session. Methods specific to SIP call routing via proxies and methods to retrieve parameters for calls, and interface

methods to the phone hardware (button press, audio formats, sounds and tones).

Methods to reuse existing audio sessions (announceaudio and dialaudio) or create them if they do not exist (p. 13-14) and methods to send and receive audio on (reused) audio channels (audiolisten and audiospeak) (p.14-15).

- 6) 2000/11/6 Lab notes printout (first 4 pages) of document showing an execution of the sip39.b (5) sip stack on IP Web Phone (2), showing basic call establishment attempt and switching between call instance on same user equipment (phone).
- 7) 2000/11/6 Printout of log file siplog.winus on same day showing further example of call instance reuse.
- 8) 2000/11/29 Printout of isiplog.demo1.1129.wip2wip, this is the log from the proxy messages on similar tests as demonstrated in November.
- 9) 2001/2/11 and 2001/2/12 Printout of two logs included to note further implementation and experimentation conducted in December 00 and January 01 to: A) enable an additional service using a SIP agent sip55lap.b (10) to establish, and B) control multiple calls between multiple end points. While this was not required for the invention, these are the only logs found to correspond in time with the sip55lap.b software (most versions between 39 and 55 were not retrievable). The Feb 11 log refers to a call with audio established between two private network over cable modem, IP and across firewalls and Internet gateways. The Feb 12 log refers to a third party call control (3PCC) setup, the agent (named sip:) is used to negotiate a call between two clients (sipc:).
- 10) 2001/01/22 Printout of sip55lap.b included for completeness, while this version of sip stack capable of 3PCC establishment is not actually required for the invention implementation to be complete (the principle of establishing and reusing a multiplicity of connection was present in the Nov. 3rd version). This version contains a (switchau) method (p. 11), in addition to reuse calls [5], the method further extends the audio session capabilities to store and retrieve (reuse) on each client, a multiplicity of (preset) audio channels (e.g. links to other clients and/or Resource servers).

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